STATE OF NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION
PURCHASE AND CONTRACT DIVISION

3750-2
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Superseding
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SPECIFICATION FOR SPREADERS, AGRICULTURAL, SEEDS, FERTILIZER

(This specification is released for procurement purposes until revised, rescinded, or formally adopted by the Standardization Committee.)

SCOPE

This specification covers agricultural seeds and fertilizer spreaders known also as broadcasters designed to be attached to Category I or Category II tractors and with readily adjustable, even, and accurate right, left, and center spread patterns for desired coverage without waste and spillage; to be of durable construction and satisfactory operation.

I. CLASSIFICATION

The agricultural spreaders included in this specification are of the following types, styles, and sizes:

Type I - 3-point hitch - P.T.O. drive

Size: 700 pound hopper capacity to 2600 pound (based on 65 lb/cu.ft. density or 1,000 Kg/cu.m. per ASAE-S281.2 standard)

Style 1 - For Category I tractor

Style 2 - For Category II tractor

It is recommended that provisions for both styles be available on each spreader.

II. APPLICABLE STANDARDS

The following document of issue in effect on the date of the Invitation for Bids shall form a part of this specification:

ASAE S281.2 - Capacity Designation For Fertilizer Hoppers and Containers
American Society of Agricultural Engineers (ASAE)
St. Joseph, MI 49085

020-85

III. REQUIREMENTS

Spreaders shall comply with the requirements of the (ASAE) S281.2 -Capacity Designation For Fertilizer Hoppers and Containers

A. PERFORMANCE

Spreaders or broadcasters to be used with seeds and granular, semi-granular and pelleted fertilizers without need of changing special parts. Also capable of effectively spreading ragged to powdery material, including bulk lime, as well as sand, calcium or salt on ice and snow.

Capable of performing at high efficiency on highways, schools, nurseries and parks, as well as on farms.

Except for refilling requirements, spreaders shall be capable of continuous operation at any of the distribution patterns selected by the operator. Seed distribution amounts controllable from three pounds per acre. Fertilizer distribution from 50 to 1,000 pounds per acre.

1. Ease of Attachment

   Spreaders shall be easy to attach to their pulling equipment, 3-point hitch and PTO drive. The chassis shall be stable and will not tilt over whether loaded or unloaded.

2. Distribution Pattern Adjustment

   The spread patterns being center to left side, center to right side, and centered or 90°left side, 90° right side, and 180° for center position. This distribution to be easily adjusted by the operator by means of levers and mechanical linkage. Fertilizer shall be evenly and uniformly distributed once spreading pattern is established.

3. Rate of Distribution Adjustment

   To be a simple mechanism to regulate the rate of seed or fertilizer distribution depending upon type, density of substance, pounds per acre, and ground speed. Feed plate opening may be adjusted by means of a distribution scale and notched plates. Spreader shall distribute material at a constant rate after adjustment.

4. Hopper Feed Control (On/Off)

   Unit to have a hopper feed control mechanism to be activated by operator. This to be accomplished by controlling the feed ring mechanism, or feed plate opening. Operator to control hopper feed (on/off) from his normal operating position.

5. Compatibility

   All PTO drive spreader components to be compatible with PTO speeds of pulling equipment.

6. Hopper Feed Automatic Shut-Off

   Unit to have means to stop flow of fertilizer or seed when equipment or spreading action is stopped to prevent material spillage.

7. Manual Shut-Off Location

The hopper feed manual shut-off to be easily accessible to operator.

8. Ease of Cleaning

Hopper, frame, distribution plates or spinners shall be easy to reach, remove, and clean without the use of tools.

B. CONSTRUCTION

Hopper, frame, spreader mechanism, and structural supporting members shall be heavy duty and properly reinforced construction, capable of withstanding loads arising from operation on uneven ground. Components shall be accurately and permanently aligned to prevent tipping. Shall include a stand or support sufficiently strong to adequately support the unit when fully loaded and lowered to the ground.

Tolerances and gauges for metal fits shall conform to this specification and to standards of good commercial practice. Finished contact bearing surfaces shall be true and exact. All bearing housings shall protect the bearing from foreign materials (glass, dirt, etc.).

1. Hopper

Hopper to be heavy 14 ga. min. steel, prime coated and painted to resist corrosion, easy to clean. Upper lip rolled for extra strength. All seams welded.

2. Spreaders

Spreaders to be high grade commercial steel, coated and painted to resist corrosion, easy to clean.

3. Frame

Frame of heavy steel pipe, properly welded into a solid one-piece support for the hopper. To be stable, shall not tilt over whether hopper loaded or unloaded. It shall be easy to attach to tractor.

4. Tow Plate (When Specified in the Invitation For Bids)

Tow plate to be built in and to permit a straight-through-pull from the 3-point hitch arms to pull a wagon or lightharrow.

5. PTO Drive

PTO drive to be telescoping shaft shielded and to transmit power smoothly to a fully enclosed gear box where heavy duty bevel gears run in a constant oil bath. All shafts to run on ball bearings.

6. Trailer (When Specified in the Invitation For Bids)

For use of spreader with small tractors or tractors without 3-point hitch a trailer may be used. Trailer to be of sturdy frame construction, rust proof finished, capable of

supporting fully loaded spreader; to be easily and securely attached to pulling tractor for smooth operation.

Wheels shall be of metal construction of either cast or disk type (with disks welded, bolted, or riveted to each other).

Drive axles or wheels shall have ball, or roller type wheel bearings. Ball and roller type bearings shall be packed with grease, and be either: (a) permanently sealed to prevent entry of dirt and moisture: or (b) equipped with grease fittings for lubrication and the flushing out of dirt and moisture.

Wheels shall be fitted with pneumatic, or simi-pneumatic tires. Pneumatic tires shall be industrial type and suitable for the load range of the trailer. All tires shall have sufficient traction to operate the spreader within the specified requirements, and shall not mar the turf in normal operation.

7. Controls

Controls to be of durable construction to regulate the spreading rate, amount, etc. These controls shall be located within convenient reach of the operator. The controls shall be positive in action and remain fixed in any desired position.

8. Finish

Finish shall be durable, weatherproof, and corrosion resistant.

9. Stand

Spreader to include stand or support of sufficient strength to adequately support the unit when fully loaded and lowered to the ground.

IV. WARRANTY

Under this proposal and agreement, the supplier warrants the equipment to be of good material and workmanship and agrees to promptly replace any part or parts which by reason of defective material or workmanship shall fail under normal use, free of negligence or accident, for a minimum period of 12 months from date put in operation. Such replacement shall be free of any charge to the State of North Carolina.

V. SERVICE, PARTS, AND MANUALS

Spreaders shall be delivered by the contractor complete, fully assembled, and ready for use and operation. This shall be stated in the contract certification.

A. SPARE PARTS

The ability to provide spare parts on a prompt and continual basis, shall be a consideration in awarding a contract. The bidder shall be required to state, in the Invitation for Bids, his sources of spare parts supply, and furnish with each proposal a current price list for spare parts. This information shall become part of the contract certification. A pamphlet listing spare parts shall be provided with each spreader.

B. INSTRUCTION BOOK

The contractor shall furnish with each spreader a booklet or pamphlet giving complete instructions for the operation, lubrication, adjustment, and care of the spreader and attachment units.

VI. ACCEPTANCE EVALUATION AND QUALITY ASSURANCE

Spreaders and attachments may be inspected and tested by the Division to determine compliance with this specification.

In the evaluation of bids, samples may be required to determine the award of contracts. If so, each bidder will be advised concerning sample delivery instructions.

VII. DELIVERY AND PAYMENT

Purchasers should exercise any desired option offered herein and should specify the following the Requisition and Invitation For Bids:

1. Title, number, and date of this specification
2. Spreader type, style, and size
3. If tow plate is required.
4. If trailer is needed (for tractors w/o 3-point hitch) see Item III.B.6.